

Skilled trades employment

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"It's all very well to talk about a knowledge-based society. There are many kinds of knowledge needed to keep the economy operating—including vocational and technical knowledge. Try running a home or a business without it." (Maxwell 2007)

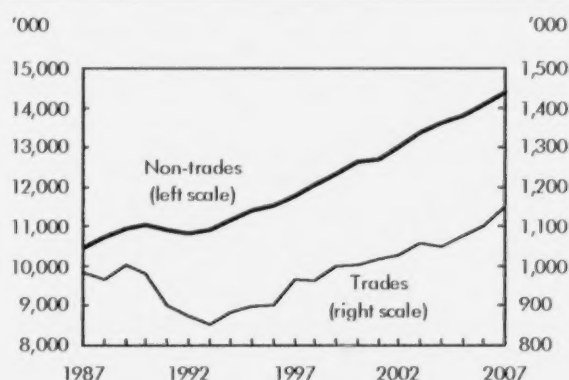
Press coverage demonstrates that issues associated with employment in the trades are a concern for many in Canada. These issues include the aging of the workforce, since the often physical nature of many jobs in the trades may have more of an impact on workers. Furthermore, immigration policies and regulations regarding certification requirements also hit many occupations in the trades, not just occupations like doctors and nurses. Will the supply of tradesworkers keep up with the demands of the economy? The Business Conditions Survey for the Manufacturing Industries found that, in 2006 and 2007, the major production impediment was the shortage of skilled labour (Statistics Canada 2008c).

In addition, the issue of employment shortages in the trades has been on the minds of policymakers. The 2006 Federal Budget offered several incentives to encourage employment in the trades. The Apprenticeship Incentive Grant is a taxable cash grant of \$1,000 per year, up to \$2,000 per person. This grant helps cover tuition, travel and tool costs, and is meant to encourage the completion of apprenticeship programs (HIRSDC 2007). The Apprenticeship Job Creation Tax Credit is a non-refundable tax credit of up to \$2,000 per year (10% of the eligible salaries of apprentices) for employers who hire apprentices (CRA 2007). The Tradesperson's Tools Deduction provides an annual deduction of up to \$500 to help cover the cost of the purchase of new tools for employed tradespersons (CRA 2006). Several provincial programs have also

been introduced to encourage high school students to pursue these occupations by allowing students to work towards an apprenticeship through a cooperative education placement while still in high school (Government of Ontario 2008 and Government of Alberta 2007).

This article uses the Labour Force Survey to examine employment trends in selected trade occupations over the past 20 years (see *Data source and definitions*) and looks at the socio-economic characteristics of these workers and the characteristics of the jobs they held.

Chart A Slow but steady employment growth, but only since the mid-1990s in the trades



Source: Statistics Canada, Labour Force Survey.

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Data source and definitions

The **Labour Force Survey** collects information each month on the labour market activity of the civilian, non-institutionalized population 15 years of age and over. Excluded from the survey are persons living in the territories or on reserves and full-time members of the Canadian Armed Forces. Each month, a representative sample of approximately 53,000 households is surveyed. The population used in the study also excluded students.

All differences mentioned in the text and the quality measures were tested for statistical significance using the jackknife methodology for determining the coefficients of variation.

Skilled trades commonly refer to the "type of occupation that typically includes complex activities and requires skills and account knowledge of the subject. One usually has to do one to three years of postsecondary education in a college or university (depending on the school system), or two to four years in an apprenticeship program, or two to three years of on-the-job training. A combination of these three forms of training can also allow the practice of the trade. A license or certificate may be compulsory." (Canadian Council of Directors of Apprenticeship 2007)¹

The occupations studied are based on the **National Occupational Classification for Statistics (NOC-S) 2001**, "H – Trades, Transport and Equipment Operators and Related Occupations" (Statistics Canada 2001).² Eight trades were selected for this study.³

Plumbers, pipefitters and gas fitters (NOC-S H11)

- installing, repairing and maintaining water distribution and waste water systems in buildings, steam and hot water heating systems, liquid chemical distribution, sprinkler systems, and gas piping for appliances or manufacturing processes.
- Most are Red Seal designated.

Carpenters and cabinetmakers (NOC-S H12)

- constructing, repairing and maintaining structures made of wood or wood substitutes, and constructing and repairing wooden cabinets, furniture or fixtures.
- Red Seal designated.

Masonry and plastering trades (NOC-S H13)

- laying bricks or blocks, finishing concrete, setting clay or ceramic tiles, plastering, and drywall installation.
- Many are Red Seal designated.

Other construction trades (NOC-S H14)

- roofing, installing glass, insulating buildings against temperature extremes, painting and decorating, and installing floor coverings.
- Red Seal designated.

Stationary engineers, power station operators and electrical trades and telecommunications occupations (NOC-S H2)

- operating and maintaining boilers and other stationary engines, operating electric power generation switchboards, installing and repairing wiring systems, install-

ing and repairing electrical equipment, constructing and maintaining power and telecommunications lines, and maintaining cable television services.

- Many are Red Seal designated.

Machinists, metal forming, shaping and erecting occupations (NOC-S H3)

- setting up and operating machine tools, forming and shaping sheet metal or steel plates, and erecting structural metal or platework.
- Most Red Seal designated.

Mechanics (NOC-S H4)

- installing, repairing and maintaining machinery, transportation equipment, appliances and other mechanical equipment.
- Some are Red Seal designated.

Crane operators, drillers and blasters (NOC-S H62)

- operating cranes or draglines, operating drills in open-pits and quarries, operating drills to drill water wells, and setting off explosive charges in surface mines, quarries and construction sites.
- Some are Red Seal designated.

An **apprenticeship** is a formal agreement between an **apprentice** (a person who wants to learn certain occupational skills) and an employer (who needs a skilled worker). Apprenticeship programs are administered at the provincial level and combine technical, in-school training and on-the-job learning supervised by a certified journeyman. The length of each component is trade specific. Following this training period and the passing of an examination, apprentices receive a Certificate of Apprenticeship and a Certificate of Qualification, which allow them to be a certified journeyman.

A **journeyman** is a formally certified worker whose experience and training meet the requirements of their trade.

Red Seal designated trades have training and certification based on national standards, indicating interprovincial qualifications for journeymen to work anywhere in Canada without having to write further exams (Canadian Council of Directors of Apprenticeship 2007).

The **ratio of entrants to near-retirees** is one way to examine the aging phenomenon within an occupation. In this article, entrants were defined as workers aged 25 to 34 and near-retirees as those 50 or older. The age range for entrants captures those in the early years of their careers, after most would have completed postsecondary education. An alternative definition of entrants (age 20 to 29) was also examined, with similar results—the trades were more in balance than other occupations and the ratios declined since 1987.

Steady employment growth since the mid-1990s

Some 1.1 million people were employed in the trades in 2007 (Chart A). Following declines during the late 1980s and early 1990s, employment grew an average of 2.2% per year, slightly higher than non-trades (2.0%). Throughout the period, the trades consistently accounted for 8% of total employment.

During economic downturns, building and construction projects are hit particularly hard. Indeed, during the recession of the early 1990s, the unemployment rate in the trades was substantially higher than in other occupations (Chart B).⁴ In 1992, unemployment in the trades peaked at 14.3%, significantly higher than the peak in non-trades (11.1% in 1993). Since 1996, the rate has been virtually the same for trades and non-trades.

Not all trades experience the same impact from the business cycle. While the unemployment rate in each occupation peaked during the early 1990s, other construction trades, masons and carpenters had the high-

est rates, approaching 25%. This was far higher than the peak for mechanics (9.7%) and electricians (10.2%) in 1992. Although the unemployment rate gap between the various trades narrowed after the recession, their ranking remained relatively consistent. Indeed, over the past 20 years, the three occupations with the highest peaks in the early 1990s generally experienced the highest unemployment rates and the two with the lowest peaks consistently had the lowest rates.

The trades, mainly male with large entry cohorts

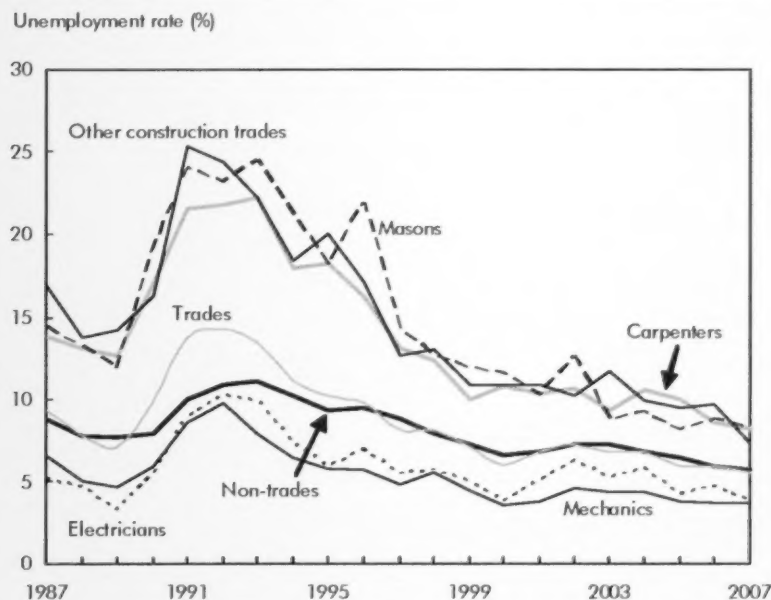
While men account for half of employment in non-trades occupations, they make up the vast majority in the trades (97% in 2007). Although the proportion of men in other occupations declined over the past two decades (from 54% in 1987 to 50% in 2007), in the trades men retained their strong representation.

With the aging of the workforce comes concern about whether enough younger workers will be available to replace older workers as they retire. Since fewer years of postsecondary education are generally required, the average age of those employed in the trades, 40 in 2007, was almost two years younger than for other occupations (Table 1). Plumbers, with an average age of 37, were the youngest in 2007, while crane operators were the oldest (42). Indeed, the average age in most trades was younger than in the non-trades.

Over the past two decades, the average age of those working in occupations other than the trades increased by 4 years—from 37 in 1987 to 41 in 2007—similar to the increase in the trades. But not all occupations experienced this degree of aging—the average age of carpenters increased by only 2 years.

Another way to look at the age composition of an occupation is through the ratio of entrants (age 25 to 34) to near-retirees (50 or over). When this ratio is below one, meaning fewer people in the early stages of their careers than will be

Chart B Finding work more difficult in the trades during the recession of the 1990s



Source: Statistics Canada, Labour Force Survey.

Table 1 Employment, average age and ratio of entrants to near-retirees in trades

| | Employed | | | Average age | | | Entrants / near-retirees | | |
|---------------------------|---------------|---------------|---------------|---------------------------|---------------------------|-------------------------|--------------------------|--------------------------|------------------------|
| | 1987 | 1997 | 2007 | 1987 | 1997 | 2007 | 1987 | 1997 | 2007 |
| | '000 | | | years | | | ratio | | |
| Total | 11,416 | 12,724 | 15,518 | 37.1^(*) | 39.3^(*) | 41.3[*] | 1.7^(*) | 1.3^(*) | 0.8[*] |
| Non-trades | 10,431 | 11,756 | 14,371 | 37.2 ^(*) | 39.4 | 41.4 | 1.6 ^(*) | 1.3 ^(*) | 0.7 |
| Trades | 985 | 968 | 1,147 | 36.4 ^(*) | 39.1 ^(*) | 39.6 [*] | 2.0 ^(*) | 1.5 ^(*) | 1.0 [*] |
| Plumbers | 50 | 54 | 70 | 37.7 | 40.0 ^(*) | 37.2 [*] | 1.7 | 1.1 ^(*) | 1.6 [*] |
| Carpenters | 132 | 115 | 148 | 36.8 ^(*) | 38.8 | 38.8 [*] | 1.5 ^(*) | 1.5 ^(*) | 1.0 [*] |
| Masons | 51 | 39 | 62 | 36.2 | 39.0 | 37.7 [*] | 1.7 [†] | 1.6 [†] | 1.5 [*] |
| Other construction trades | 61 | 65 | 90 | 34.5 ^(*) | 37.9 [*] | 38.5 [*] | 2.1 ^(*) | 1.7 ^(*) | 1.1 [*] |
| Electricians | 155 | 152 | 183 | 36.3 ^(*) | 39.7 | 40.9 | 2.6 ^(*) | 1.5 ^(*) | 0.8 |
| Machinists | 185 | 180 | 203 | 36.7 ^(*) | 38.4 ^(*) | 39.4 [*] | 2.0 ^(*) | 1.6 ^(*) | 1.1 [*] |
| Mechanics | 331 | 346 | 373 | 36.2 ^(*) | 39.1 ^(*) | 40.3 [*] | 2.1 ^(*) | 1.4 ^(*) | 1.0 [*] |
| Crane operators | 21 | 17 | 17 | 37.5 ^(*) | 43.5 [*] | 42.0 | 2.4 ^(*) | 0.5 [†] | 0.6 [†] |

* significantly different from the non-trades at 0.05 level or less

† significantly different from 2007 at 0.05 level or less

Source: Statistics Canada, Labour Force Survey.

retiring soon, it points to a potential net out-flow of workers. In 2007, the ratio for non-trades was 0.7, indicating significantly more workers nearing retirement than in the early stages of their careers. This was substantially lower than the ratio of 1.6 in 1987 and illustrates the well-known phenomenon of the baby boom generation—now approaching retirement—and the subsequent significantly smaller generation beginning their careers. However, this aging phenomenon has not affected the trades equivalently. For this group of workers, the ratio was 1.0 in 2007, indicating a demographic balance between young and older workers, with a steep decline since 1987 when twice as many were entrants as near-retirees.⁵ Some trades, like plumbing and masonry, had substantially more entrants than near-retirees in 2007 (1.6 and 1.5 respectively). This indicates a continued strong presence of young blood in many trades. The exceptions in 2007 were electricians (0.8) and crane operators (0.6), whose ratios were similar to non-trades occupations.

Majority in the trades had some postsecondary education

Many jobs in the trades require formal training past high school, such as trade certificates or diplomas. Provincially administered apprenticeship programs combine on-the-job learning and formal training.⁶ For example, in Alberta, the electrician apprenticeship program lasts four years and requires on-the-job training

(1,500 hours annually in the first three years and 1,350 in the fourth) plus in-class training (8 weeks per year in the first three years and 12 weeks in the fourth) (Government of Alberta 2004). Almost 7 in 10 workers in the trades in 2007 had at least some postsecondary education, most below the bachelor's level (63%) (Table 2). While an equivalent proportion of workers in other occupations also had at least some postsecondary education, far more had achieved degrees at the bachelor's level or higher (26%). The well-known increase in education levels seen across all occupations was also seen in the trades—about half had some postsecondary education in 1990, compared with 68% in 2007.

About 8 in 10 plumbers and electricians had postsecondary education, well above the national average. This reflects the requirements set out in the provincial certification programs. Not all trades are subject to such strict educational requirements—only 4 in 10 masons and other construction trades had at least some formal education following high school.

A shift to the West

The boom in the oil and gas industry and the accompanying construction boom have helped spur both economic and employment growth in the two westernmost provinces. While 10% of all non-trades employment was located in Alberta in 1987, this increased to 12% in 2007 (11% and 13% respectively

Table 2 Highest level of education of workers in the trades

| | Postsecondary below bachelor's | | | % | Bachelor's degree or above | | |
|---------------------------|--------------------------------|-------------------------|-----------------------|---|----------------------------|-------------------------|-----------------------|
| | 1990 | 1997 | 2007 | | 1990 | 1997 | 2007 |
| Total | 36^(*) | 42^(*) | 44[*] | | 15^(*) | 19^(*) | 24[*] |
| Non-trades | 35 ^(*) | 41 ^(*) | 42 | | 16 ^(*) | 20 ^(*) | 26 |
| Trades | 48 ^(*) | 60 ^(*) | 63 [*] | | 2 ^(*) | 3 ^(*) | 5 [*] |
| Plumbers | 59 ^(*) | 76 [*] | 76 [*] | | F | F | 3 ^{E*} |
| Carpenters | 36 ^(*) | 47 [*] | 51 [*] | | 2 ^{E*} | 3 ^{E*} | 4 [*] |
| Masons | 23 ^(*) | 31 [*] | 35 [*] | | F | F | 5 ^{E*} |
| Other construction trades | 27 ^(*) | 36 [*] | 36 [*] | | F | 3 [*] | 5 [*] |
| Electricians | 65 ^(*) | 73 [*] | 74 [*] | | 2 ^{E*} | 4 ^(*) | 7 [*] |
| Machinists | 45 ^(*) | 62 ^(*) | 66 [*] | | 2 ^{E*} | 2 ^{E*} | 4 [*] |
| Mechanics | 53 ^(*) | 65 ^(*) | 69 [*] | | 1 ^{E*} | 2 ^(*) | 4 [*] |
| Crane operators | 20 ^(*) | 35 ^(*) | 51 | | F | F | F |

* significantly different from the non-trades at 0.05 level or less

(*) significantly different from 2007 at 0.05 level or less

Source: Statistics Canada, Labour Force Survey.

for British Columbia). However, the growth in these provinces affected the trades even more. In 1987, 9% of all trades employment was found in Alberta—by 2007, this increased to 15% (11% and 15% respectively for British Columbia). This is in sharp contrast to the other provinces. For example, coinciding with the decline in manufacturing, the proportion of tradesworkers in Ontario was 36% in 2007, down significantly from 41% in 1987.

Although over one-third of all trades jobs were in Ontario in 2007, machinists and masons were over-represented (both at 39%) and carpenters were under-represented (28%) (Table 3). Fully one-quarter of Canada's mechanics lived in Quebec, a higher proportion than for other trades. In keeping with the strength of Alberta's oil and gas sector, nearly one in four persons employed as plumbers, pipefitters and gas fitters worked in Alberta in 2007.

Table 3 Provincial distribution of trades employment

| | Newfound- land and Labrador | Prince Edward Island | Nova Scotia | New Brun- swick | Quebec | Ontario | Manitoba | Saskat- chewan | Alberta | British Columbia |
|---------------------------|-----------------------------------|----------------------------|------------------|-----------------------|--------------------|-------------------|-------------------|-------------------|-------------------------|---------------------|
| Total | 1.3 | 0.4 | 2.7 | 2.2 | 22.7 | 39.0 | 3.5 | 3.0 | 11.8[*] | 13.4 |
| Non-trades | 1.3 | 0.4 | 2.7 | 2.2 | 22.8 | 39.2 | 3.5 | 3.0 | 11.5 | 13.3 |
| Trades | 1.5 [*] | 0.4 | 2.5 | 2.2 | 21.6 [*] | 35.6 [*] | 3.4 | 3.1 | 15.0 [*] | 14.7 [*] |
| Plumbers | 1.3 ^E | 0.5 ^E | 3.2 | 2.3 | 12.6 [*] | 34.7 | 2.3 ^{E*} | 3.8 | 23.5 [*] | 15.8 |
| Carpenters | 2.2 [*] | 0.6 [*] | 3.4 | 2.0 | 24.8 | 27.8 [*] | 3.2 | 2.8 | 13.8 [*] | 19.4 [*] |
| Masons | 1.1 ^E | F | 2.2 ^E | 1.9 ^E | 18.1 [*] | 39.0 | 3.4 ^E | F | 16.2 [*] | 15.9 |
| Other construction trades | 1.2 ^E | 0.5 ^E | 2.2 | 2.2 ^E | 18.0 [*] | 35.1 [*] | 3.2 | 2.8 | 17.0 [*] | 17.8 [*] |
| Electricians | 1.9 [*] | 0.4 | 2.8 | 2.9 [*] | 19.0 [*] | 38.3 | 3.7 | 3.2 | 14.6 [*] | 13.3 |
| Machinists | 1.2 | 0.3 | 1.7 [*] | 1.7 [*] | 19.5 [*] | 39.2 | 3.6 | 3.3 | 18.2 [*] | 11.3 [*] |
| Mechanics | 1.2 | 0.4 | 2.5 | 2.3 | 26.2 [*] | 34.6 [*] | 3.6 | 3.3 | 11.7 | 14.2 |
| Crane operators | F | F | F | F | 13.9 ^{E*} | 47.0 | 3.3 ^E | 3.4 ^E | 12.8 ^E | 13.7 ^E |

* significantly different from the non-trades at 0.05 level or less

Source: Statistics Canada, Labour Force Survey, 2007.

Table 4 Tradesworkers by immigrant status

| | Canadian-born | Immigrants | | |
|---------------------------|---------------|-------------------|----------------------|------------------------|
| | | Total | 10 or more years ago | Less than 10 years ago |
| | | % | | |
| Total | 79.0 | 21.0 | 72.1 | 27.9 |
| Non-trades | 78.6 | 21.4 | 72.0 | 28.0 |
| Trades | 83.0* | 17.0* | 73.7 | 26.3 |
| Plumbers | 90.0* | 10.0* | 83.2* | 16.8* |
| Carpenters | 85.7* | 14.3* | 73.0 | 27.0 |
| Masons | 74.6 | 25.4 | 60.7* | 39.3* |
| Other construction trades | 83.3* | 16.7* | 67.5 | 32.5 |
| Electricians | 85.2* | 14.8* | 73.7 | 26.3 |
| Machinists | 77.5 | 22.5 | 80.4* | 19.6* |
| Mechanics | 83.9* | 16.1* | 72.2 | 27.8 |
| Crane operators | 83.8 | 16.2 ^E | 84.4 | F |

* significantly different from the non-trades at 0.05 level or less
Source: Statistics Canada, Labour Force Survey, 2007.

Fewer immigrants employed in the trades

Recent immigrants are much likelier than the Canadian-born to have a university degree (Galarneau and

Morissette 2004). Indeed, 51% of those arriving between 2001 and 2006 had a university degree, far higher than the 20% for the Canadian-born population (Statistics

Canada 2008a). Since the educational requirements of jobs in trades are below university level, one might expect fewer immigrants to be working in the trades. According to the 2007 Labour Force Survey, 17% of workers in the trades were immigrants, significantly lower than the 21% in the non-trades occupations (Table 4).⁷ None of the trades had a higher proportion of immigrants than the non-trades. Plumbers were the least likely to be immigrants (10%).

In terms of time residing in Canada, 4 in 10 immigrant masons had arrived in Canada in the past 10 years, significantly more than immigrants working in the non-trades occupations (28%). About 1 in 5 employed masons had immigrated within the previous five years, compared with only 1 in 8 of those in non-trades occupations. Immigrant plumbers and machinists were less often recently arrived (17% and 20% respectively).

Table 5 Job characteristics of tradesworkers

| | Usually worked 50 or more hours per week | | | Multiple job holder | | | Unionized ¹ | | Permanent ¹ | |
|---------------------------|--|---------------------------|-------------|--------------------------|--------------------|-------------------|---------------------------|--------------|---------------------------|-------------|
| | 1987 | 1997 | 2007 | 1987 | 1997 | 2007 | 1997 | 2007 | 1997 | 2007 |
| | | | | % | | | | | | |
| Total | 14.1^(*) | 13.7^(*) | 11.7 | 4.0^(*) | 5.1 | 5.2* | 35.0^(*) | 32.7* | 89.8^(*) | 88.9 |
| Non-trades | 14.6 ^(*) | 13.9 ^(*) | 11.8 | 4.1 ^(*) | 5.3 | 5.4 | 34.0 ^(*) | 31.8 | 89.8 ^(*) | 88.8 |
| Trades | 8.7 ^(*) | 10.6* | 10.3* | 3.0 ^(*) | 3.1 ^(*) | 2.5* | 47.0 ^(*) | 43.8* | 90.0 | 90.3* |
| Plumbers | 7.6 ^(*) | 11.2* | 12.6 | 2.1 ^{E*} | 2.0 ^{E*} | 1.9 ^{E*} | 59.7* | 54.1* | 83.2* | 84.2* |
| Carpenters | 11.7* | 16.2 ^(*) | 11.9 | 2.7* | 3.2 ^(*) | 2.2* | 32.6 ^(*) | 39.1* | 75.0 ^(*) | 83.1* |
| Masons | 11.0 ^(*) | 14.7 | 15.9* | 3.4 ^E | 2.4 ^{E*} | 1.6 ^{E*} | 46.0* | 45.7* | 76.3* | 77.0* |
| Other construction trades | 12.4 ^(*) | 12.6 ^(*) | 16.2* | 2.7 ^{E*} | 3.5 ^{E*} | 2.8* | 32.0 | 32.0 | 77.8* | 78.6* |
| Electricians | 5.0 ^(*) | 6.2* | 6.7* | 3.2* | 2.9* | 2.6* | 70.0 ^(*) | 63.1* | 91.8* | 90.3* |
| Machinists | 6.5 ^(*) | 7.3 ^(*) | 9.3* | 2.9* | 2.4* | 2.4* | 47.5 ^(*) | 41.8* | 92.4* | 91.8* |
| Mechanics | 9.6* | 11.5 ^(*) | 9.1* | 3.2* | 3.6* | 2.8* | 38.5 ^(*) | 35.5* | 95.3 ^(*) | 96.5* |
| Crane operators | 9.4 ^{E*} | 10.5* | 13.9 | F | 3.3 ^E | F | 70.8* | 63.5* | 88.1 | 88.1 |

* significantly different from the non-trades at 0.05 level or less

^(*) significantly different from 2007 at 0.05 level or less

1. Employees only.

Source: Statistics Canada, Labour Force Survey.

Full-time jobs more common in the trades

The vast majority of workers in the trades worked full time (97% in 2007).⁸ Those in other construction trades had the lowest proportion of full-time workers in 2007 (92%). Perhaps due to the full-time nature of most jobs in the trades, very few tradespeople held multiple jobs—only 2.5% in 2007 compared with 5.4% for other occupations (Table 5).

While the proportion of non-trades workers usually working long hours (50 or more per week) declined over the past 20 years, among plumbers, masons, electricians, machinists and other construction trades the proportion increased. In 2007, one in six masons and those in other construction trades worked 50 or more hours per week.

Self-employment, especially solo, growing in the trades

While it may be a common perception that tradesworkers often run their own business or work independently, in 2007 they were self-employed slightly less often than workers in other occupations (15% and 16% respectively) (Table 6). The self-employed can either have employees or work on their own (with

perhaps unpaid help from a family member). A much higher proportion of the self-employed in the trades were without employees (92% in 2007) than those in other occupations (65%).

Self-employment varied substantially by trade. Electrical, telecommunications and stationary engineers and machinists were the least likely to be self-employed (7%); those in other construction trades were the most likely (39%), followed by masons and plasterers, and carpenters and cabinetmakers (32% and 25% respectively). In each trade, very few had employees.

Over the past two decades, self-employment has increased at a higher rate in the trades than in other occupations. In 1987, only 9% of tradespersons were self-employed, compared with 15% in 2007, an increase of nearly 60%. This contrasts with the relative stability in other occupations. The growth in the proportion of the self-employed varied by occupation. The two occupations with very low rates in 1987 (electrical and machinists) experienced a doubling of their self-employment rates. Despite these large gains, their rates were still much lower than in occupations outside trades. Among the self-employed, the proportion without employees increased significantly. For example, among self-employed carpenters, fully 94% did not have employees in 2007, compared with 75% in 1987.

Table 6 Self-employment in the trades

| | Self-employed | | | | Self-employed without employees | | |
|---------------------------|---------------------------|---------------------------|-------------------|---|---------------------------------|---------------------------|-------------------------|
| | 1987 | 1997 | 2007 | | 1987 | 1997 | 2007 |
| | | | | % | | | |
| Total | 13.6^(*) | 17.2^(*) | 16.3 | | 52.9^(*) | 63.3^(*) | 66.5[*] |
| Non-trades | 14.1 ^(*) | 17.5 ^(*) | 16.4 | | 51.1 ^(*) | 61.9 ^(*) | 64.7 |
| Trades | 9.2 ^(*) | 14.0 [*] | 14.5 [*] | | 81.9 ^(*) | 83.8 ^(*) | 91.9 [*] |
| Plumbers | 7.0 ^(*) | 16.9 | 12.1 [*] | | 90.4 [*] | 79.1 [*] | 88.0 [*] |
| Carpenters | 20.2 ^(*) | 35.8 ^(*) | 25.3 [*] | | 74.9 ^(*) | 88.2 ^(*) | 93.7 [*] |
| Masons | 20.6 ^(*) | 34.3 [*] | 31.6 [*] | | 78.3 ^(*) | 83.2 ^(*) | 92.4 [*] |
| Other construction trades | 28.1 ^(*) | 36.2 [*] | 39.2 [*] | | 97.2 ^(*) | 85.3 ^(*) | 92.6 [*] |
| Electricians | 3.1 ^(*) | 5.6 [*] | 6.8 [*] | | 83.2 [*] | 80.5 [*] | 90.2 [*] |
| Machinists | 2.9 ^(*) | 3.0 ^(*) | 7.4 [*] | | 72.2 [*] | 78.9 [*] | 87.2 [*] |
| Mechanics | 6.8 ^(*) | 9.6 [*] | 10.0 [*] | | 81.3 ^(*) | 81.1 ^(*) | 92.2 [*] |
| Crane operators | F | F | F | | F | F | F |

^{*} significantly different from the non-trades at 0.05 level or less

^(*) significantly different from 2007 at 0.05 level or less

Source: Statistics Canada, Labour Force Survey.

Unionization strong in the trades

Unionized workers generally earn higher wages than non-unionized workers—even after adjusting for personal, job and workplace characteristics, unionized construction workers had the largest wage premium (Fang and Verma 2002). Other benefits include employer-sponsored pension plans, dental and medical plans and accessibility to a grievance or dispute settlement system (Akyeampong 2002 and Akyeampong 2003). Nearly half of employees in trades were unionized, compared with less than a third in other occupations (Table 5). Indeed, in three groups—crane operators, electricians and plumb-

ers—the majority of employees were union members. Employees in other construction trades were the least unionized, with a rate of 32%, the same rate as outside the trades.

Another indication of job quality is job permanency, as temporary jobs generally have lower pay, fewer benefits and less opportunity for on-the-job training (Galarneau 2005).⁹ Overall, 9 in 10 tradespersons held permanent jobs. In some of these occupations, permanency was even higher, reaching over 95% for mechanics. This is in sharp contrast to masons and those in other construction trades (77% and 79% respectively).

Higher wages, but only for some trades

In 2007, employees in the trades averaged \$22.36 in hourly earnings, 6% higher than the \$21.02 for other occupations (Table 7). The highest earners were electricians (\$25.26), crane operators (\$24.61) and plumbers (\$24.10). These occupations had the highest unionization rates and high job permanency rates. In contrast, trades with lower averages—other construction trades (\$19.24) and carpenters (\$20.43)—had substantially lower unionization rates (32% and 39% respectively).

Between 1997 and 2007, employees outside the trades saw greater increases in their average constant-dollar hourly earnings than those in the trades—7.4% com-

pared with 3.5%. The only trade surpassing the non-trades group was carpenters, with an increase of just over 8%. These employees had a relatively low unionization rate (39%) in 2007. Most trades experienced virtually no increase in real earnings between 1997 and 2007, with the exception of carpenters, machinists and mechanics.

Summary

Widespread concerns have been expressed over the potential supply of workers in the trades. Various government policies have been introduced to encourage and support workers in these occupations.

In 2007, just over 1 million people worked in the eight selected trades studied. Following declines in the late 1980s and early 1990s, employment growth in these occupations virtually matched that of other occupations. The trades have consistently made up 8% of total employment, indicating that their employment changes through the most recent business cycle mirror those of other workers. Over the past 10 years, unemployment rates have been virtually the same for the trades and other occupations. However, their peaks during the recession of the early 1990s were significantly higher than for other occupations.

Economic growth in the two westernmost provinces had a strong impact on the trades. In 1987, less than 20% of all trades employment was found in these two provinces; twenty years later it reached nearly 30%. Over the same period, non-trade employment went from 21% to 25%.

Self-employment, particularly without employees, is a growing phenomenon among tradespersons. In 1987, only 9% of tradesworkers were self-employed; by 2007, this increased to 15%. Some trades, including electricians and machinists, saw even higher growth rates—although their self-employment rates remained lower than for non-trades occupations.

Most trades had higher unionization rates than the overall rate for other occupations, and while tradespersons had higher-than-average earnings, over the past decade increases in the trades have not kept up with other occupations. Indeed, their overall increase was roughly half that of the non-trades workers and only three trades saw greater earnings increases between 1997 and 2007 (carpenters, machinists and mechanics).

Table 7 Average hourly earnings for trades employees

| | 1997 | 2007 |
|---------------------------|----------------------------|--------------------|
| | 2007\$ | |
| Total | 19.73^(*) | 21.12 |
| Non-trades | 19.57 ^(*) | 21.02 |
| Trades | 21.60 ^(*) | 22.36 [*] |
| Plumbers | 24.06 [*] | 24.10 [*] |
| Carpenters | 18.90 ^(*) | 20.43 [*] |
| Masons | 21.14 [*] | 21.23 |
| Other construction trades | 18.56 [*] | 19.24 [*] |
| Electricians | 24.99 [*] | 25.26 [*] |
| Machinists | 21.24 ^(*) | 22.07 [*] |
| Mechanics | 20.86 ^(*) | 21.89 [*] |
| Crane operators | 23.67 [*] | 24.61 [*] |

^{*} significantly different from the non-trades at 0.05 level or less

^(*) significantly different from 2007 at 0.05 level or less

Source: Statistics Canada, Labour Force Survey.

Finally, the average age of those working in the trades was under 40 in 2007—slightly younger than other workers (41). The aging of the population had a similar effect on both trades and non-trades—with the average age increasing by about 4 years over the past two decades. A look at the ratio of entrants (age 25 to 34) to near-retirees (50 or older) indicates that workers in the trades were in fact more in balance in 2007 than those in other occupations (1.0 versus 0.7).

Perspectives

■ Notes

1. Some provinces have programs that allow experienced tradespersons the opportunity to illustrate that they have sufficient skills and experience to meet provincial standards. Alberta's Qualification Certificate Program sets out specific requirements (hours of work experience, successful completion of exams and payment of fees) that, when fulfilled, allow workers to become certified workers in their trade (Government of Alberta n.d.).
2. The comparison group includes all occupations other than the eight specified trades.
3. Skilled trades can be further divided into four categories based on the dominant industry—construction, transportation, manufacturing and service (Skills Canada and Canadian Apprenticeship Forum n.d.). In an effort to focus this study on a more homogeneous population, the trades in the service sector were not included. Occupations from that group include horticulturalists, chefs and florists and are distinctly different in terms of job demands and personal and job characteristics of the workers.
4. For those not currently employed, occupation is based on their most recent job in the previous 12 months (Statistics Canada 2008b).
5. Many non-demographic factors also influence labour supply and demand. For example, strong demand in a local labour market could lead to a shortage despite a balance in the demographic ratio.
6. The Registered Apprenticeship Information System provides details on apprenticeship programs in New Brunswick, Ontario and Alberta (Morissette 2008). It gathers information on individuals who receive training and obtain certification within a trade. Being longitudinal, it provides measures of program completion and documents the various paths through the programs.
7. This was the first year that immigration status was collected in the Labour Force Survey.
8. This is at least partially related to the high proportion of men in the trades.
9. Permanent jobs have no predetermined end date.

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